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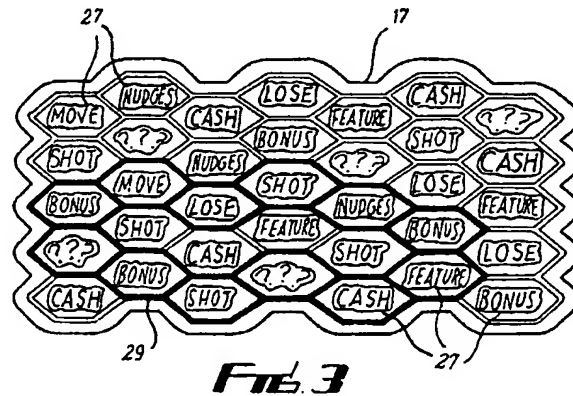
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G4V VAA V118

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GB 2369916 A GB 2367412 A
GB 2355103 A GB 2065948 A

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UK CL (Edition V) G4V VAA
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Other: Online: WPI, EPODOC, JAPIO

(54) Abstract Title: **Supplementary trail game for amusement machine**

(57) A coin-operated amusement machine has a main display device with rotatable reels which are used in play of a main game to display a selected combination of symbols, and a supplementary display device for playing a feature game. The supplementary display device has a regular 'honeycomb' matrix (17) of back-illuminated hexagonal cells (27) printed on a light-transmitting panel. When play transfers to the feature game, an initial trail is defined by back-illumination of a configuration of the cells (27). The player can change this configuration to define a new trail by operating a change button, when change opportunities are available, as indicated on a display. Play then progresses along the selected trail in correspondence with operation of a selector reel.



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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

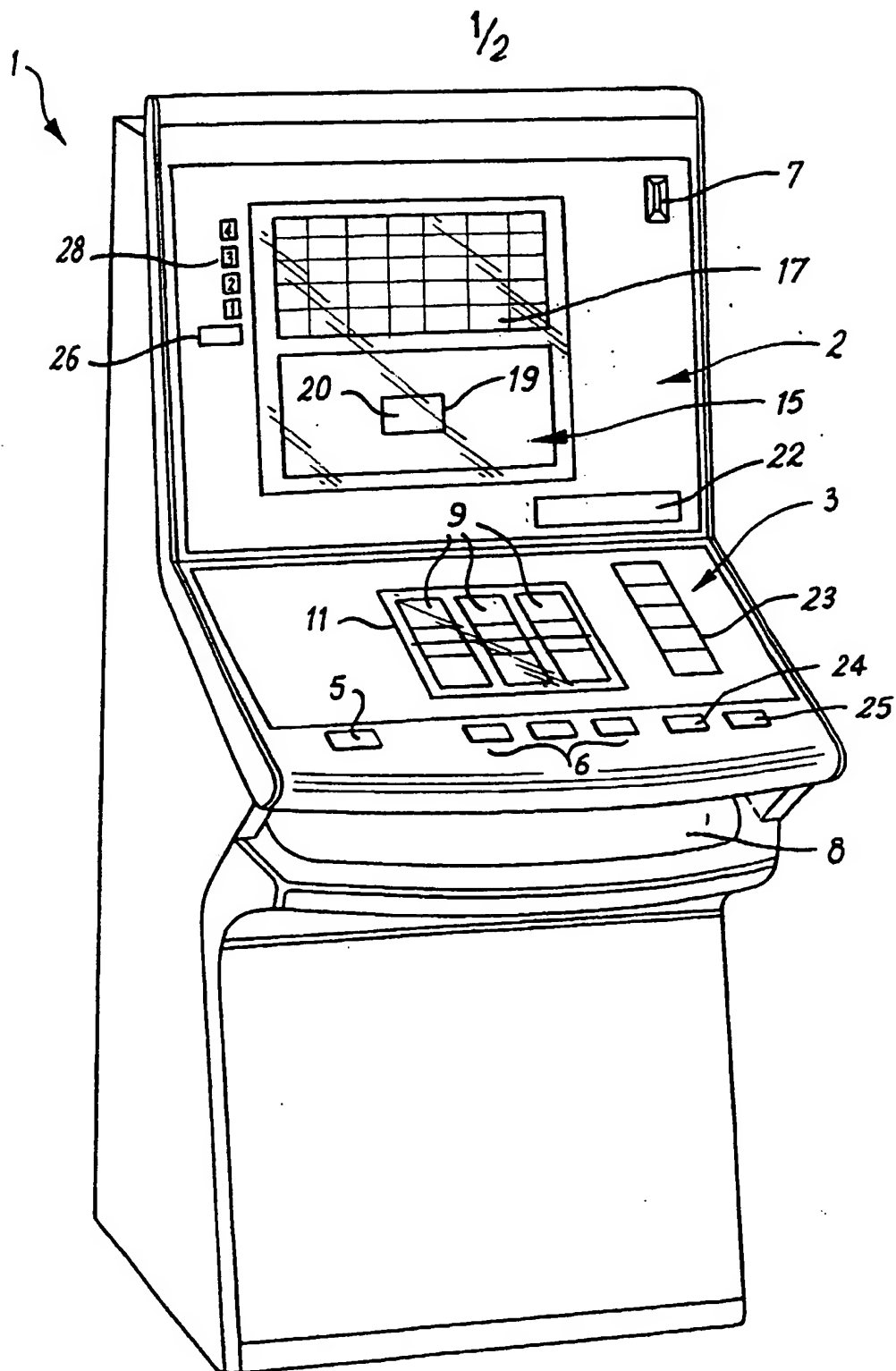


FIG. 1

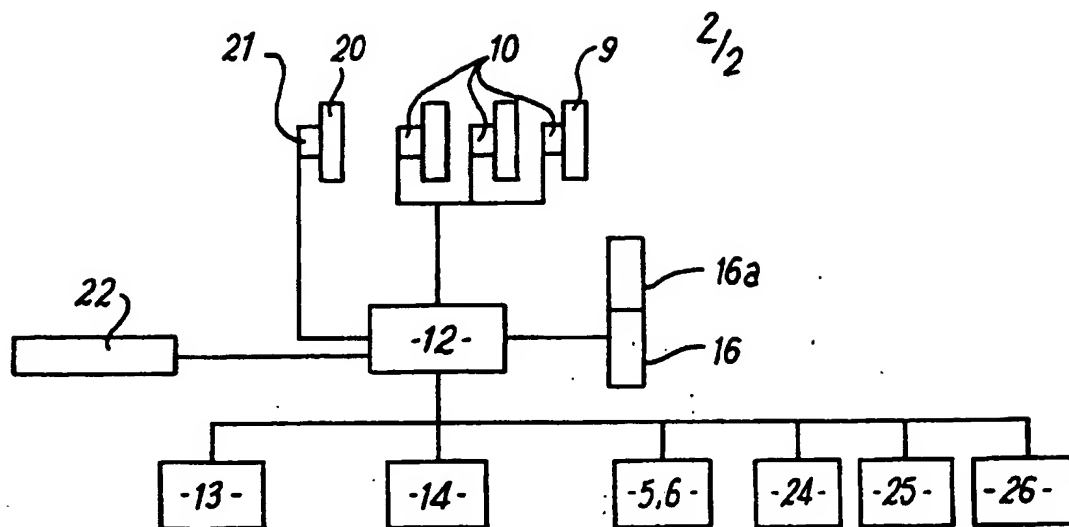


FIG. 2

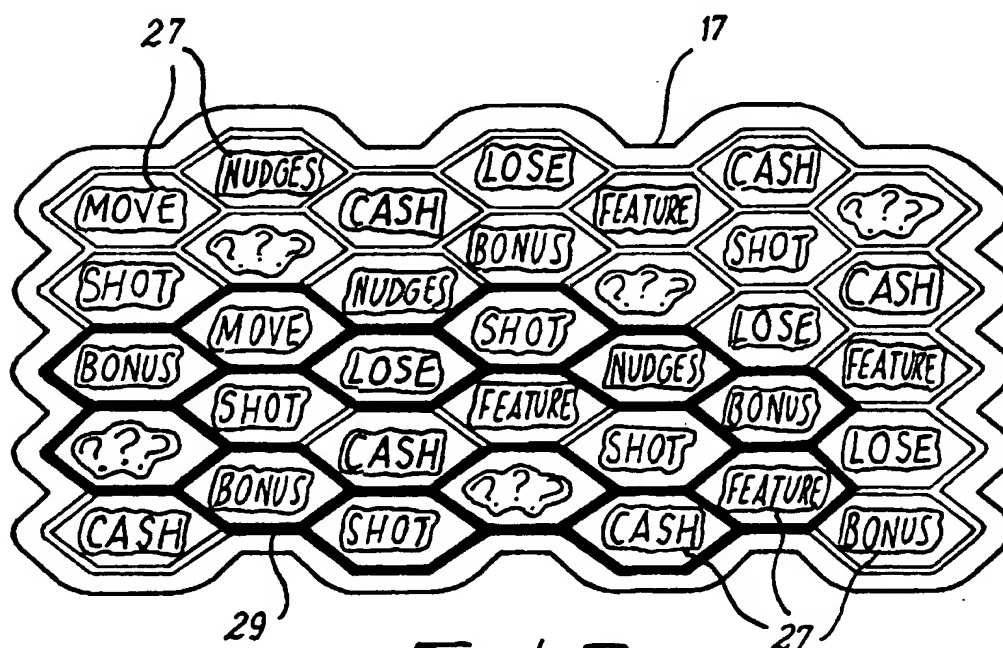


FIG. 3

ENTERTAINMENT MACHINES

This invention relates to player-operable entertainment machines, particularly coin-operated machines referred to as amusement with prizes (AWP) machines (or as otherwise identified depending on the jurisdiction),
5 such as "fruit" or "poker" machines, of the kind having a main display device operable in play of a main game for displaying a selected combination of symbols at a win zone. As used herein the term coin is intended also to cover tokens, charge or credit cards or any other means of supplying credit or monetary value.

10 The main display device of a fruit machine may comprise multiple side-by-side reels which are rotatable about a common horizontal axis within a housing behind a window at the win zone. Each reel has symbols at equally spaced positions around its periphery and the reels can be brought to rest with one symbol on each reel displayed through the
15 window on a win line.

If the displayed combination of symbols constitutes a predetermined winning combination an award may be made available to the player.

20 It is well known to provide a supplementary display or 'feature game' which can be used to enhance the entertainment value of the machine and provide additional or alternative opportunities for winning.

In particular, it is known to provide a panel having sections which can be selectively illuminated to represent movement from position to

position along a trail, particularly along a wraparound or closed-loop trail, which may simulate the playing of a board game.

Play is transferred from the main reels to the trail of the feature game on a random or predetermined basis and illumination of the panel sections may then be effected by, or in correspondence with, a rotatable
5 subsidiary feature reel, or otherwise, representing the spin or a reel or roll of a dice or other selection.

Awards or award possibilities may be made available to the player in dependence on the position on the trail to which play has progressed.

10 An object of the present invention is to provide a trail-based feature game having enhanced playing entertainment.

According to the invention therefore there is provide a player-operable entertainment machine having a main display device for playing a main game and a supplementary display device for playing a feature game
15 involving advancement from position to position along a trail, characterised in that the supplementary display device comprises a plurality of trail positions which can be linked in different configurations to form different trails.

With this arrangement the different trails give greater variety and
20 consequently enhance playing-entertainment.

The different configurations may involve different numbers of trail positions.

Alternatively or additionally, the different configurations may

involve different combinations of positions.

Alternatively or additionally, the different configurations may involve different routes between positions.

Each configuration may comprise one or more closed-loop trails.

5 Alternatively or additionally other arrangements may be used, such as open-ended trails, and also crossing, intersecting and branching trails.

The trail positions may be defined by display regions of any suitable size and shape which may be arranged in a regular or irregular matrix or grid. In one preferred embodiment a regular 'honeycomb' matrix is used,
10 however other matrix or grid cell shapes such as diamonds or squares can also be used.

Linking of the trail positions to form the different configurations may be effected under automatic machine control and/or under player control on any suitable basis.

15 Thus, a linking configuration may be initially established and subsequently changed automatically by the machine on a predetermined occasion or in accordance with a predetermined event, e.g. when the feature games comes into play, or after each positional advancement during play of the feature game, or on the occurrence of any other
20 suitable event; or on a random or pseudo random basis.

Alternatively or additionally provision may be made for the player to change, or influence change of the linking configuration with a control, such as a press button, which may be made available for operation on

any suitable random, pseudo-random or predetermined basis.

The manner in which the linking configuration is changed may be determined on any suitable random, pseudo random or predetermined basis. Thus, the trail positions may be linked randomly or pseudo
5 randomly, to generate a new linking configuration, or a new linking configuration may be selected on a random, pseudo random or predetermined basis from a range of predetermined such configurations.

In the case where a player control is used to change the linking configuration, operation of the control may predictably result in change of
10 the linking configuration and the nature of the change may not be made known in advance to the player, or it may be made known whereby for example the player can select from a range of indicated configurations.

Alternatively or additionally, operation of the player control may not predictably result in change of the linking configuration. Thus, for
15 example, in one embodiment, the control may be used to implement a gamble, such as a high-low gamble whereby the player guesses whether a next selected number will be higher or lower than a current indicated number, and the linking configuration may change only if the guess is correct.

20 A limitation may be imposed on changing of the linking configuration by reference to available 'change' or 'switch it' opportunities. Such opportunities may be awarded or may accumulate on any suitable random, pseudo random or predetermined basis whereby

changing of the linking configuration is only possible when at least one such opportunity is available. Conveniently the number of available opportunities may be indicated to the player e.g. with an alphanumeric display, or column, or stack or the like, which may be decremented in correspondence with usage of such opportunities.

Progression along the selected trail or trails may be effected in any suitable manner. Thus, progression may be effected by, or in correspondence with, a random or pseudo-random step-selector, such as a rotatable number-bearing reel or the like, which selects, or displays the selection of, a number of progression steps.

Alternatively or additionally progression may be effected in correspondence with the outcome of a play feature which may be a skill or simulated skill feature. For example, a gamble feature may be provided whereby progression occurs in a predetermined manner, e.g. through one step, if a gamble is taken and has a successful outcome. Thus, the player may gamble on the next number selected with a numerical selector, such as a number-bearing rotatable reel, being higher or lower than a current number.

One or more of the trail positions may correspond to positive outcomes, such as monetary awards, bonuses, play features, mystery awards; and one or more of the trail positions may correspond to negative outcomes such as play termination, loss of awards or features; whereby the appropriate said outcome is implemented when play progresses to the

respective position. These outcomes may be visually indicated on, or in relation to the trail positions. In the case where the trail leads to a target position, e.g. where the trail has an end as in the case of a 'start to end' or open-ended trail, an award, such as a jackpot or highest available
5 award may be made available if play reaches the end, and there may be lesser awards or losses at position short of the end.

The supplementary display device may comprise a light-transmitting panel having regions which can be selectively illuminated.

Most preferably the entertainment machine is a coin-operated
10 machine, such as an 'amusement with prizes' (AWP) machine, particularly of the fruit machine or poker machine kind using actual (or simulated) rotatable reels as mentioned above.

The invention will now be described further by way of example only and with reference to the accompanying drawings in which:-

15 Figure 1 is a diagrammatic perspective view of one form of an entertainment machine according to the invention;

Figure 2 is a block circuit diagram of the machine; and

Figure 3 is an enlarged view of part of a display panel of the machine.

Referring to the drawings, Figure 1 shows a fruit machine having a
20 floor-standing box shaped housing 1 having a front wall which includes upper and lower glass panels 2, 3, a number of operating buttons 5, 6, 24, 25, 26, a coin slot 7 and a payout opening 8.

Within the housing 1 there are three axially aligned reels 9 having

say 20 symbols at regularly spaced positions around their peripheries. The reels 9 are axially rotatable and are drivably connected to respective stepper motors 10. The reels 9 are arranged behind a window 11 defined by a printed region of the lower glass panel 3. Each reel 9 can be
5 arrested by the respective stepper motor 10 in any of 20 stopping positions in which one symbol is in precise registration with a horizontal win line in the centre of the window 11 and two further symbols are visible above and below the win line.

The stepper motors 10 are connected to a microprocessor-based
10 control unit 12. This unit is also connected to a coin-mechanism 13, a pay-out mechanism 14 and the buttons 5, 6, 24, 25, 26.

In use, the player inserts coins into the coin mechanism 13 through the slot 7 sufficient to generate credit for one or more games. The amount of credit is shown on an LED or LCD display 22 and the machine
15 is actuated so that a main game can now be played. The main game commences after a start button 5 has been pressed and the reels 9 spin and then come to rest so as to select a combination of symbols displayed on the win line. The displayed symbol combination is assessed by the control unit 12 and a win indication is given in the event that the
20 combination is of a predetermined winning nature.

The control buttons 6 can be used to perform 'hold' or 'nudge' functions, when made available to the player, so that the player can seek to influence the outcome of a game, in conventional manner.

The upper panel 2 is a transparent glass panel and within this there is a printed display region 15, which can be back-illuminated with a bank of lamps 16, and which provides a supplementary feature game having a trail display 17 yet to be described.

5 Beneath the trail display 17, the region 15 includes a printed window 19 behind which an auxiliary feature reel 20 is rotatable. The reel 20 has around its periphery the numbers 1 to 12 corresponding to the values which can be selected with two dice. The reel 20 can be rotated with a stepper motor 21, controlled by the control system 12, and
10 brought to rest with one of the numbers shown through the window 19.

The trail display 17, as shown in Figure 3 comprises a regular 'honeycomb' matrix of hexagonal cells 27. The cells 27 are printed on the panel 2 and enclose printed identifications of outcomes such as award values, bonuses, play features, mystery awards and the like, as well as
15 losing outcomes.

The cells can be individually back illuminated using the lamps 16.

Alongside the trail display 17 there is a printed column 28 or 'stack' or 'switch it' opportunities (yet to be described). The printed column 28 or stack consists of a series of numbers, e.g. the series 4, 3,
20 2, 1, 4, 3, 2, 1. The button 26 is positioned at the bottom of the column 28.

Play transfers to the trail display 17 from the main game in the usual way on a random or predetermined basis, e.g. when predetermined

transfer symbols on the main reels 9 are selected on the win line or otherwise.

When play transfers to the trail display 17, a trail 29 is shown on the display, made up of linked selected cells 27, which are indicated by selective back illumination. In Figure 3, twelve cells 27 are linked to
5 define a single closed-loop trail 29.

This initial trail 29 may be derived and displayed only when play transfers to the display 17, or it may be pre-derived and pre-displayed prior to any such transfer.

10 If desired, the player may then cause play to progress, from cell to cell 27 around the trail 28 by successive back illumination of the cells 27 simulating movement through a number of steps.

The player operates the start button 5 (or another feature button) to cause the feature reel 20 to rotate and select a number which
15 determines the number of steps through which play progresses along the trail 29. Progression terminates at a selected cell 27 at which the outcome on the cell 27 is back illuminated. The outcome is then made available to the player in the usual way. Thus, depending on the nature of the outcome, bonuses or features may be accumulated, cash awards
20 may be made or credited, transfer to another feature such as a jackpot feature may be effected, or play may be terminated, etc.

The column 28 is back illuminated, with the lamps 16 to indicate the number of 'switch it' opportunities (1, 2, 3 or 4) available, depending

on which number in the column is illuminated. Illumination moves up the column 28 in accordance with any suitable parameter or event, e.g. on a random basis or following the selection of a predetermined symbol or symbol combination on the reels 9 or on the trail 29 or otherwise.

5 Whenever any number in the column 28 is illuminated the player has the option, before pressing the button 5 to select a number of steps with the reel 20, to press the button 26.

10 If the button 26 is pressed, the trail display 17 changes to produce a new trail 29 defined by a different configuration of linked cells 27. This different trail 29 may be a single open ended trail, a closed loop trail, a branched trail or any combination of these using any number of the cells 27. By way of example, instead of the closed-loop trail of Figure 3, there may be an open-ended 'start to end' trail whereby play starts at one end and progresses towards the opposite end, a jackpot or other highest
15 award being made if play reaches the opposite end, and lesser awards, or negative outcomes being implemented if play terminates at a cell short of the end of the trail.

20 The new trail 29 may be established by random or pseudo random linking of cells 27, or it may be selected on a random, pseudo random or predetermined basis from a predetermined range of configurations.

 At the same time as the new trail is established, the illumination of the column 28 changes so as to decrement by one the number of available 'switch it' opportunities.

In the event that the main game results in a winning combination of symbols on the win line 11, and/or the feature game results in selection of a winning cell or cells of the trail display 17, and a monetary award is made available to the player, on a random or pseudo random basis the
5 player may be given an opportunity of gambling the value of the award.

As shown there is a gamble ladder 23 having steps corresponding to successively increasing values starting with zero or a low value. The steps are rapidly back illuminated (with lamps 16a) in sequence when the gamble feature is actuated and a gamble control (e.g. one or both of
10 buttons 24, 25) can then be pressed to arrest the sequential illumination on one of the steps. The gambled award is then increased (or decreased) to the value corresponding to the illuminated step.

The buttons 24, 25 can be used as High-Low buttons, in conjunction with the reel 20, to effect progression along the trail 28, as
15 an alternative to selection of a number of steps with the reel 20 as described above.

Thus, instead of using the button 5 to spin the reel 20, the player selects one of the buttons 24, 25 (High or Low). The reel 20 then spins to change the number already displayed on the reel 20. If the number
20 changes to a higher number and the player has pressed the high button 24, or if the number changes to a lower number and the player has pressed the Low button 25 there is a successful outcome. Otherwise there is a losing outcome. A successful outcome results in progression

through one step along the trail 28.

Moreover, the buttons 24, 25 may be used, instead of the button 26 to change the trail 29. The player implements a High-Low gamble which causes the trail to change only if successful.

5 With the arrangement described above, the player is provided with increased involvement and variety, and hence enhanced entertainment, since the player has the option of changing the trail display 17 of the feature game. It will be appreciated that there may be a very large number of possible trail configurations whereby the variety may be
10 considerable.

 It is of course to be understood that the invention is not intended to be restricted to the details of the above embodiments which are described by way of example only. Thus, for example, instead of the honeycomb matrix of trail positions, other regular or irregular patterns of
15 cells of any suitable common or differing shape and size may be used.

 Also, in place of a backlit illuminated panel a vdu, monitor or pc screen or any other suitable device may be used to display the trail 17, or to display any other feature of the machine.

CLAIMS

1. A player-operable entertainment machine having a main display device for playing a main game and a supplementary display device for playing a feature game involving advancement from position to position along a trail, characterised in that the supplementary display device comprises a plurality of trail positions which can be linked in different configurations to form different trails.
2. A machine according to claim 1 wherein the different configurations involve different numbers of trail positions.
3. A machine according to claim 1 or 2 wherein the different configurations involve different combinations of positions.
4. A machine according to any one of claims 1 to 3 wherein the different configurations involve different routes between positions.
5. A machine according to any one of claims 1 to 4 wherein each configuration comprises one or more closed-loop trails.
6. A machine according to any one of claims 1 to 5 wherein the trail positions are defined by display regions arranged in a matrix or grid.
7. A machine according to claim 6 wherein the display regions are arranged in a regular matrix or grid.
8. A machine according to claim 7 wherein the display regions are hexagonal regions of a regular matrix.
9. A machine according to any one of claims 1 to 8 wherein an initial linking configuration of the trail positions is changed under

automatic machine control.

10. A machine according to any one of claims 1 to 9 wherein a player-operable control is provided which is operable to change an initial linking configuration of the trail positions.
- 5 11. A machine according to claim 10 wherein the control is operable to select from a range of indicated linking positions.
12. A machine according to claim 10 wherein the control is used to implement a gamble which involves a guess which if correct results in change of the linking position.
- 10 13. A machine according to any one of claims 9 to 12 wherein change opportunities are awarded and change of the linking configuration is possible only when at least one such opportunity has been awarded.
- 15 14. A machine according to claim 13 wherein the number of available said opportunities is indicated to the player and is decremented in correspondence with usage thereof.
- 20 15. A machine according to any one of claims 1 to 14 wherein progression along the selected trail or trails is effected in correspondence with a step-selector which displays the selection of a number of progression steps.
16. A machine according to any one of claims 1 to 15 wherein progression along the selected trail or trails is effected in correspondence with the outcome of a skill feature.

- 5
17. A machine according to any one of claims 1 to 16 wherein one or more of the trail positions corresponds to positive outcomes and one or more of the trail positions corresponds to negative outcomes whereby the appropriate outcome is implemented when play progresses to the respective position.
18. A machine according to any one of claims 1 to 17 wherein the supplementary display device comprises a light-transmitting panel having regions which can be selectively illuminated.
- 10
19. A machine according to any one of claims 1 to 18 which is a coin-operated machine and wherein the main display device comprises actual or simulated rotatable reels.
20. A player-operable entertainment machine substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB 0217456.3
Claims searched: 1 - 19

16

Examiner: Tom Sutherland
Date of search: 30 October 2003

Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance	
X	1 - 4, 6 - 19	GB 2369916 A	(MAZOOMA) See Fig. 4 and page 9 line 24 onwards.
X	1 - 5, 9 - 11, 13 - 19	GB 2367412 A	(BELL-FRUIT) Whole document.
X	1 - 4, 6 - 19	GB 2355103 A	(IMPULSE) Whole document, note matrix 3, Fig. 1.
X	1 - 4, 6, 7	GB 2065948 A	(GÜNTER WULFF) See page 1 lines 101 to 117 and the Fig.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^V:

G4V

Worldwide search of patent documents classified in the following areas of the IPC⁷:

G07F

The following online and other databases have been used in the preparation of this search report:

WPI, EPODOC, JAPIO